



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,514	09/13/1999	TAKAO OGAWA	0102/0074	4339

21395 7590 08/13/2002

LOUIS WOO  
LAW OFFICE OF LOUIS WOO  
1901 NORTH FORT MYER DRIVE  
SUITE 501  
ARLINGTON, VA 22209

EXAMINER

COLON, CATHERINE M

ART UNIT PAPER NUMBER

3623

DATE MAILED: 08/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/394,514

Applicant(s)

OGAWA ET AL.

Examiner

C. Michelle Colon

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The following is a Non-Final Office Action in response to the communication received on May 15, 2002. In light of the remarks in Appellant's Brief, the finality from the previous Office Action has been withdrawn and prosecution has been reopened. Claims 1 – 7 are now pending in this application.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5 – 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiappetti (U.S. 4,338,587).

As per claim 1, Chiappetti discloses an ETC (electronic toll collection) system comprising:

an antenna having a predetermined directivity for providing a limited radio-communication service zone (col. 1, lines 60 – 68; col. 2, lines 62 – 64; col. 4, lines 18 – 36; Figure 1; The reference discloses an antenna providing a limited radio-communication service zone along an express lane.);

a vehicle sensor for detecting a vehicle which reaches a predetermined position in the limited radio-communication service zone (col. 2, lines 2 – 4; col. 3, lines 11 – 17; col. 4, lines 45 – 51; Figure 1; The reference discloses a vehicle sensor for detecting the

Art Unit: 3623

presence of a vehicle at a predetermined position within the radio-communication service zone.);

first means for transmitting a radio signal via the antenna (col. 4, lines 18 – 20);

second means for deciding whether or not a radio response to the radio signal is received via the antenna (col. 2, lines 4 – 7; col. 3, lines 17 – 28; col. 4, lines 45 – 67; The reference discloses determining if a radio response (i.e., INFO in the reference) to the radio signal (i.e., REQ in the reference) has been received.);

third means for, in cases where the second means decides that a radio response to the radio signal is received, judging that there is an ETC vehicle incoming (col. 2, lines 4 – 20; col. 2, line 58 – col. 3, line 10; The reference discloses judging an ETC vehicle by receiving vehicle information through the radio response.); and

fourth means for, in cases where the vehicle sensor detects a vehicle while the second means decides that a radio response to the radio signal is not received, judging that there is a non-ETC vehicle incoming (col. 2, lines 4 – 20; col. 4, lines 63 – 66; The reference discloses judging a non-ETC vehicle by not receiving vehicle information through the radio response.).

As per claim 2, Chiappetti discloses an ETC system as recited in claim 1, wherein the first means comprises means for continuously transmitting the radio signal via the antenna (col. 4, lines 20 – 22).

As per claim 5, Chiappetti discloses an ETC system as recited in claim 1, wherein the vehicle sensor is only one in the ETC system (col. 2, lines 2 – 4; item 22 in Figure 1; The reference discloses a single vehicle sensor for each toll system.).

As per claim 6, Chiappetti discloses an ETC (electronic toll collection) system, comprising:

an antenna (col. 2, lines 62 – 64; col. 4, lines 18 – 19);

transceiver means working cooperatively with said antenna for outputting a radio signal at a given rating level to cover a limited radio-communication service zone (col. 1, lines 60 – 68; col. 2, lines 62 – 64; col. 4, lines 18 – 36; Figure 1; The reference discloses an antenna providing a limited radio-communication service zone along an express lane.);

a vehicle sensor for detecting whether a vehicle has reached a predetermined position in said limited radio-communication zone (col. 2, lines 2 – 4; col. 3, lines 11 – 17; col. 4, lines 45 – 51; Figure 1; The reference discloses a vehicle sensor for detecting the presence of a vehicle at a predetermined position within the radio-communication service zone.);

said transceiver means further working cooperatively with said antenna for detecting radio response to said radio signal from each vehicle detected by said vehicle sensor within said radio-communication zone (col. 2, lines 4 – 7; col. 3, lines 11 – 28; col. 4, lines 45 – 67; The reference discloses determining if a radio response (i.e., INFO in the reference) to the radio signal (i.e., REQ in the reference) has been received from each vehicle detected by the vehicle sensor.); and

processor means for deciding a vehicle that has been detected by said vehicle sensor in said radio-communication zone is a non-ETC vehicle if no radio response to said radio signal is detected from said vehicle (col. 2, lines 4 – 20; col. 4, lines 63 – 66;

Art Unit: 3623

The reference discloses judging a non-ETC vehicle by not receiving vehicle information through the radio response.).

As per claim 7, Chiappetti discloses an ETC system as recited in claim 6, wherein said processor means decides a vehicle that has been detected by said vehicle sensor in said radio-communication zone is an ETC vehicle if a radio response to said radio signal is detected from said vehicle (col. 2, lines 4 – 20; col. 2, line 58 – col. 3, line 10; The reference discloses judging an ETC vehicle by receiving vehicle information through the radio response.).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiappetti (U.S. 4,338,587) and Hassett et al. (U.S. 5,406,275).

As per claim 3, Chiappetti does not expressly disclose an ETC system as recited in claim 1, wherein the limited radio-communication service zone has a length greater than a length of a standard vehicle and smaller than twice the length of said vehicle.

However, Hassett et al. discloses a limited radio-communication service zone whose position and dimensions can be altered (col. 5, lines 15 – 24; Figure 3).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the limited radio-communication service zone be of specified dimensions because doing so ensures that the toll radio signal is communicating with one vehicle at a time, which is essential for accurate toll collection purposes (Hassett et al., col. 1, line 66 – col. 2, line 4).

As per claim 4, Chiappetti does not expressly disclose an ETC system as recited in claim 1, wherein the limited radio-communication service zone has a length of about 6.5m along a lane.

However, Hassett et al. discloses a limited radio-communication service zone of about 20 feet, which is a negligible difference from 6.5 meters (col. 5, lines 15 – 21; Figure 3).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the limited radio-communication service zone be of specified dimensions because doing so ensures that the toll radio signal is communicating with one vehicle at a time, which is essential for accurate toll collection purposes (Hassett et al., col. 1, line 66 – col. 2, line 4).

#### ***Remarks***

6. Appellant's arguments that Hassett et al. fails to teach a vehicle sensor are moot in view of the new grounds of rejection.

**Conclusion**

7. No claims allowed.
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - Wangler et al. (U.S. 5,793,491) discusses an Intelligent Vehicle Highway System;
  - Park et al. (U.S. 6,040,785) discusses a toll collecting system using radio communication;
  - Park et al. (U.S. 6,091,344) discusses a toll collection system;
  - Dwyer et al. (U.S. 6,140,941) discusses a cashless toll collection system;
  - Olson et al. (U.S. 5,321,490) discusses a near-field object sensor;
  - Quinlan, Jr. (U.S. 4,947,353) discusses an automatic vehicle detection system;
  - Bair, Jeffrey. "AT&T, Lockheed join to create 'smart' roads," *Houston Chronicle*, April 13, 1992, discusses highways having vehicle sensors;
  - Flagg, Michael. "On the Move Traffic Engineers Have Given the Green Light to Technology..." *The Los Angeles Times*, March 7, 1993, discusses vehicle sensors alerting a controller of a vehicle passing by;
  - "Skokie toll collector accused of shortchanging state," *Pantagraph*, March 5, 1995, mentions vehicle toll booth sensors;
  - Mathias, Craig. "The evolution of asset tracking technology," *Automatic I.D. News*, May 1998, discusses moving object sensors;
  - "Electronic Toll System Gets Whitman Approval," *Record*, April, 3, 1997, discusses the *E-Z Pass* toll collection system; and



- "MFS Transportation Systems Selected for Electronic Toll Collection in Richmond,VA," *Fiber Optics Weekly Update*, May 8, 1998, discusses the *Smart Tag* toll collection system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Michelle Colon whose telephone number is 703-605-4251. The examiner can normally be reached Monday – Thursday from 8:30am to 5:30pm and every other Friday from 8:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 703-305-9643.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Art Unit: 3623

Any response to this action should be mailed to:

***Commissioner of Patents and Trademarks***

***Washington D.C. 20231***

or faxed to:

703-305-7687 [Official Communications; including After Final  
communications labeled "Box AF"]

703-746-7202 [For status inquiries, draft communication, labeled  
"Proposed" or "Draft"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive,  
Arlington, VA 7<sup>th</sup> floor receptionist.

  
CMC

August 8, 2002

  
**TARIQ R. HAFIZ**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3600**